Action Plan

Action Plan Development

The development of the action plan was guided by key water issues and drivers.

Critical Water Issues

During Step 3 of the planning process, the Partnership achieved consensus on a total of 18 key issues in eight categories:

Water Conservation

- The Mid-Coast needs a coordinated water conservation initiative/strategy that focuses on reducing water use, educating stakeholders, promoting incentives, and effectively using limited water supplies, especially in times of water shortage.
- Rural residents and businesses need improved access to information, incentives, funding, and resources to help them implement water conservation measures.

Natural Hazards, Vulnerabilities, and Emergency Preparedness

- The majority of water providers need redundancy, water system interconnections, and alternative sources to ensure access to safe drinking water in case of emergencies or shortages. Natural hazards that can impact systems include earthquakes, wildfire, landslides, debris flows, and others.

Climate Change Impacts

- Climate change is having profound impacts on the ecosystem, which affects the health and well-being of coastal communities. Although we may not fully understand nor be able to accurately predict climate change effects, we can and should proactively adapt to climate change impacts at a regional scale.

Local Capacity and Regional Collaboration

- Mid-Coast water providers share the need for system resilience and reliable source water quantity and quality. Regular coordination and collaboration among water providers can improve access to resources and funding to support this need.

Water Quantity for Instream and Out-of-Stream Uses

- Summer streamflows are insufficient in some areas of the Mid-Coast (see Water Quantity report from Step 2 of the planning process – Appendix B) to meet the instream water needs of fish and wildlife. Low streamflows contribute to water quality impairments (e.g., high temperatures and reduced dissolved oxygen) that negatively affect fish and wildlife.

- Many streams in the Mid-Coast lack: 1) legal protections (e.g., instream water rights) to protect streamflows for the full range of ecological flows, and 2) streamflow targets to guide instream flow restoration efforts where there are already significant out-of-stream uses.
- Some municipal and special district water providers are currently facing water shortages late in the summer into the fall and during dry years.
- Rural residents and landowners, agricultural irrigators, and industrial water users currently experience chronic seasonal water scarcity due to limited water availability.
- Some watershed systems, such as the Siletz, have insufficient water to meet the needs of all uses (both instream and out-of-stream) (see Water Quantity Report from Step 2 of the planning process – Appendix B) leading to ecological impacts on the rivers, insecurity for water users, and the potential for conflict.

Watershed Health

- Opportunities exist in the Mid-Coast for enhancing beaver habitat and management to increase water storage, improve stream health, and support the recovery of key native fish species.
- Degraded riparian areas throughout the Mid-Coast negatively affect water quality, wildlife habitat, and overall watershed health. Opportunities exist to improve these areas.

Water Quality for Instream and Out-of-Stream Uses

- Multiple river and stream segments consistently do not meet Oregon and federal water quality standards (see Water Quality report from Step 2 of the planning process – Appendix B): high temperature and low dissolved oxygen threaten fish, and elevated turbidity affects the ability to treat and use water.
- Low stream flow and high temperatures in the summer months, and high turbidity due to winter storms, pose challenges for drinking water suppliers to meet state and federal regulations to provide safe drinking water. In addition, these conditions pose challenges for native fish populations.
- Self-supplied rural residents are increasingly concerned about drinking water quality and seek adequate and timely data to assess regional, local, or site-specific water quality contamination issues that may pose a health risk.

Infrastructure

- The degradation of aging public water infrastructure used to divert, store, treat, and convey water can lead to water loss and water quality issues, and poses a threat to the health and safety of communities.
- Infrastructure to manage water for self-supplied uses (rural residences and agricultural operations) is oftentimes undocumented, old, inefficient, and may fail to meet current construction and quality standards, which negatively affects water security and source water quality throughout the region.

- Multiple sources of funding are needed to address current and legacy infrastructure issues and to design and build resilient infrastructure that can withstand natural hazards and help communities adapt to climate change.

Overview of the Strategic Action Imperatives

Action-oriented imperatives were created to organize and synthesize the key watershed strategies stakeholders described during the planning process to address the key issues. In addition, cross-cutting imperatives are essential to the success of each of the action-oriented imperatives — **Regional Capacity, Coordination, and Collaboration**, **Public Awareness and Support**, and **Monitoring and Data Sharing, and Funding and Investments.**

Cross-Cutting Imperatives

Regional Capacity, Coordination, and Collaboration. All strategies and actions will benefit from increased regional capacity, coordination, and collaboration. Each strategy and action will also have specific needs regarding capacity, coordination, and collaboration.

Public Awareness and Support. All strategies and actions will benefit from an improved understanding throughout the region about water conditions and challenges, with communication and outreach tailored to the interests and values of different audiences. All strategies/actions will also need various levels of public awareness and support, especially where the success of the action is contingent upon public support. A well-informed and engaged public will be more connected to water providers, water and watershed managers, and each other and will be better prepared for a changing climate, natural hazards, and other emergencies.

Monitoring and Data Sharing. All strategies and actions will benefit from improved monitoring, data collection and sharing. Specific strategies and actions will benefit from more specific data collection and monitoring efforts to track progress and impacts. The scale of data collection and monitoring efforts will be informed by the desired goal. Data collection and monitoring efforts will generally benefit from increased Capacity, and improved coordination and collaboration. Implementation of the Water Action Plan will generally benefit from increased transparency and accessibility of data for all partners. Recognizing resource constraints, recommendations to improve and enhance data collection and monitoring will need to be prioritized to focus on the highest needs identified in the plan (finding a balance between tracking status and trends of water-related conditions and monitoring the impacts of actions).

Funding and Investments. All strategies and actions will benefit from increased funding and improved access to funding. Each strategy and action will have specific needs regarding funding. Federal funding in water has decreased over time, leading to historic under-investments in watersheds and water infrastructure, as well as the communities that steward them. There is a patchwork of funding from public and private entities that can be difficult to access and piece together, especially for partners with limited capacity. Furthermore, some issues lack a sustainable source of funding altogether, such as specific data collection and monitoring efforts.

Action Oriented Imperatives

Water Conservation, Efficiency, and Reuse. Due to limited water availability for new out-of-stream uses across the Mid-Coast region as well as the need to restore and protect instream values, water conservation may be one of the most cost-effective ways to meet future water needs of the region while increasing water security and resiliency for all users. All conservation and reuse actions will assist with preparing for and adapting to reduced summer supplies resulting from climate change and increasing summer demand due to population and tourism and industrial water needs. All conservation and reuse actions are assumed to help with water quality issues associated with run-off/discharge. All conservation and reuse actions will help stretch limited supplies which may prevent or prolong the need to secure/develop additional supplies of water. Conservation and reuse actions should seek to target the biggest water users first and/or water users in the most ecologically significant places. There are three major strategies for achieving water conservation and efficiency:

- Maintaining and upgrading infrastructure to prevent leaks, rapidly identify and address leaks, and/or maximize efficient use of water.
- Training water technicians, managers, and water users to improve and optimize operations in their water systems so that no water diverted is wasted.
- Reducing demands and consumption of the end users/consumers via incentives, pricing of water, and encouraging the use of more efficient appliances and practices (e.g., xeriscaping, installing low flow toilets).

All water conservation, efficiency, and reuse actions should consider equitable access to water for disadvantaged community members (including considerations of the cost of water), near-term and long-term water security for the users, and how water savings will provide instream or ecological benefits.

Ecosystem Protection and Enhancement. Watershed ecological processes are complex and interconnected. Investments in ecological restoration and protection can have benefits for multiple other imperatives, including source water protection (drinking water quality), resilient infrastructure, water supply and storage, and preparing for natural hazards and emergencies. These functions, or benefits, are referred to as "ecosystem services." Whenever possible, watershed ecological restoration and protection should be focused on the areas that have the highest potential to yield ecological benefits and are identified in existing assessments or plans, such as the Coho Recovery Plan or Coho Business Plan. Creative partnerships that link downstream beneficiaries (e.g., cities, residents, businesses) to the benefits of a healthy watershed should be explored, including consideration of creative funding mechanisms. Ecosystem-based management is critical to the restoration, enhancement, and maintenance of aquatic systems in the Mid-Coast.

Resilient Water Infrastructure. Sustaining and planning for adequate collection and distribution systems, treatment plants, and other associated critical infrastructure requires strategies that address aging infrastructure, support resiliency, ensure future water demands are met, and advance training and professional development to ensure the availability of skilled water technicians. Investments in water

infrastructure should seek to provide multiple benefits whenever possible and mitigate impacts to the ecosystem. Infrastructure design should take into consideration opportunities for conservation, efficiency and reuse and also "green infrastructure" or ecosystem services that reduce the need for, increase the effectiveness of, or prolong the life of built or "grey infrastructure." New or upgraded infrastructure should seek to be as resilient as possible, by accounting for natural hazards and emergencies (e.g., floods, earthquakes, fires, drought, etc.). For now, this imperative focuses on infrastructure associated with individual water providers and users. Depending on analyses performed to explore regional water supply options, this imperative may be modified to account for regional water infrastructure.

Source Water Protection. Source water includes the rivers, streams, lakes, reservoirs, springs, and groundwater that deliver water to public drinking water supplies and private wells. Protecting source water reduces treatment costs, protects water quality for fish, wildlife, and human uses, and helps ensure the availability of water. Strategies to protect source water depend on the source, and include protection of riparian habitats, stream bank stabilization, land protection/easements, best management practices for agricultural, forestry, and other activities, local ordinances to limit activities in source water or wellhead protection areas, emergency response plans, and outreach and education. Source: Environmental Protection Agency[19].

Water Supply Development. Water conservation is the highest priority action for stretching limited water supplies and improving water security, but the Partnership also recognizes the current and future need for additional supplies, which may come from storage, water reuse, or other novel water supply options. The City of Yachats is currently facing water shortages, especially during drought years. There are also increasing reports of current water insecurity for self-supplied water users, which includes water for rural residents, irrigators, livestock, and self-supplied industry. This includes increasing anecdotal reports of wells going dry earlier in the summer and increased demand for bulk water and water deliveries. Georgia Pacific is the largest single water user in the region, and they are beginning to experience shortages, especially during drought years. Within the next 50 years, it is projected that municipalities may experience future water shortages due to decreasing summer supplies and increasing summer demand.

Performance Metrics

Developing performance metrics, or indicators, to assess progress made implementing any plan is critical to success. The first key step in the development of metrics was establishing criteria used to inform the metrics. Relevance to management goals and objectives, sensitivity to stressors, high "signal-to-noise" ratios (i.e., significant changes to an indicator are caused by changes in stressors versus stochastic variability), quantifiability, accuracy, precision, ability to monitor, cost-effectiveness of monitoring, and measurements that can be interpreted unambiguously, are key criteria that have been used to indicate watershed health (City of Portland Bureau of Environmental Services 2019), and are foundational to all of the imperatives and their associated actions in this plan. Because all actions identify potential lead

[19] https://www.epa.gov/sourcewaterprotection/basic-information-about-source-water-protection

organizations, it will be incumbent on those leads to ensure that appropriate performance and tracking metrics are developed and used.

Implementing the Water Action Plan

The next portion of the Mid-Coast Water Planning Partnership Water Action Plan includes implementation tables that describe a suite of actions to achieve the water objectives and priorities in the Mid-Coast region of Oregon in phases during the next 10 years, from 2022–2032. This plan should be reviewed and updated every five years given emerging issues and changes in demographics and other factors likely to occur in the Mid-Coast. The specifics for the implementation table within this plan focus on the highest priority actions that should be initiated within the next 10 years to achieve a secure water future for people and fish and wildlife in the Mid-Coast.

Prioritizing Actions

There is no intended order to the categories of actions, as all of the actions are considered Tier 1, or high priority actions by the Partnership. Tier 2 and Tier 3 actions, which are lower priority actions, were not incorporated into the tables. Charter signatories established criteria to prioritize actions:

- **High (Tier 1)**: A critical action without which the objective(s) is not achievable. An action that absolutely must be completed to fully achieve the objective.
- **Medium (Tier 2)**: A necessary, but deferrable, action that makes the plan/objective less workable, but functional. An action that is necessary, but potentially deferrable.
- **Low (Tier 3)**: A productive action to implement if the resources exist, but the plan/objectives can be achieved without implementing. An action that adds value and would be completed under ideal circumstances, but is not essential to achieve the objective(s).

Initially 150 "raw" draft actions were created by charter signatories to address the 18 key issues. The signatories then volunteered to rank the actions per agreed upon criteria, followed by all partners being given the opportunity to comment on priority rankings. Any redundancies across actions were eliminated, and language associated with each action was refined. The set of tables in this plan represents all of the high priority actions identified by charter signatories.

The strategies listed in the implementation table are a result of a prioritization exercise conducted by charter signatories, which resulted in all Tier 1, or high priority strategies, being included in the table. The Tier 2 and Tier 3 strategies, which were not incorporated, can be reviewed on the Partnership website on the Action Plan page. No additional prioritization occurred during the planning process other than describing the phase (1, 2, or 3) in which a specific strategy could likely be implemented.

It is anticipated that each of the entities involved in the development of this plan and actions can identify the role they may play in implementing one or more of the actions in the table, and that all will continue to work collaboratively to assess progress made implementing the actions.

Water Action Teams (Figure 9) will be formed to maintain communication and coordination around the six action-oriented imperatives. The Partnership will, at a minimum, meet on a quarterly basis to support coordination of work between partners. The Partnership will focus its efforts on increasing regional capacity, coordination, and collaboration, building public awareness and support, increasing funding and access to funding, and improving monitoring and data sharing to more effectively implement each of the six action-oriented imperatives. The Partnership will also strive on an annual or bi-annual basis to convene a Regional Water Summit to track and report progress on plan implementation and celebrate success.

This plan is intended to be used by the many partners, organizations, and individuals that live and work in the Mid-Coast Planning Area to achieve the goals, objectives, and actions described herein. In some instances, a watershed council could use the plan to justify funding for an aquatic habitat restoration project. In other instances, a municipal water district could use the plan to identify high priority infrastructure projects, and seek funding to support a specific action. It is anticipated that many of the actions in each phase of this plan will be implemented simultaneously, as resources and capacity exist.

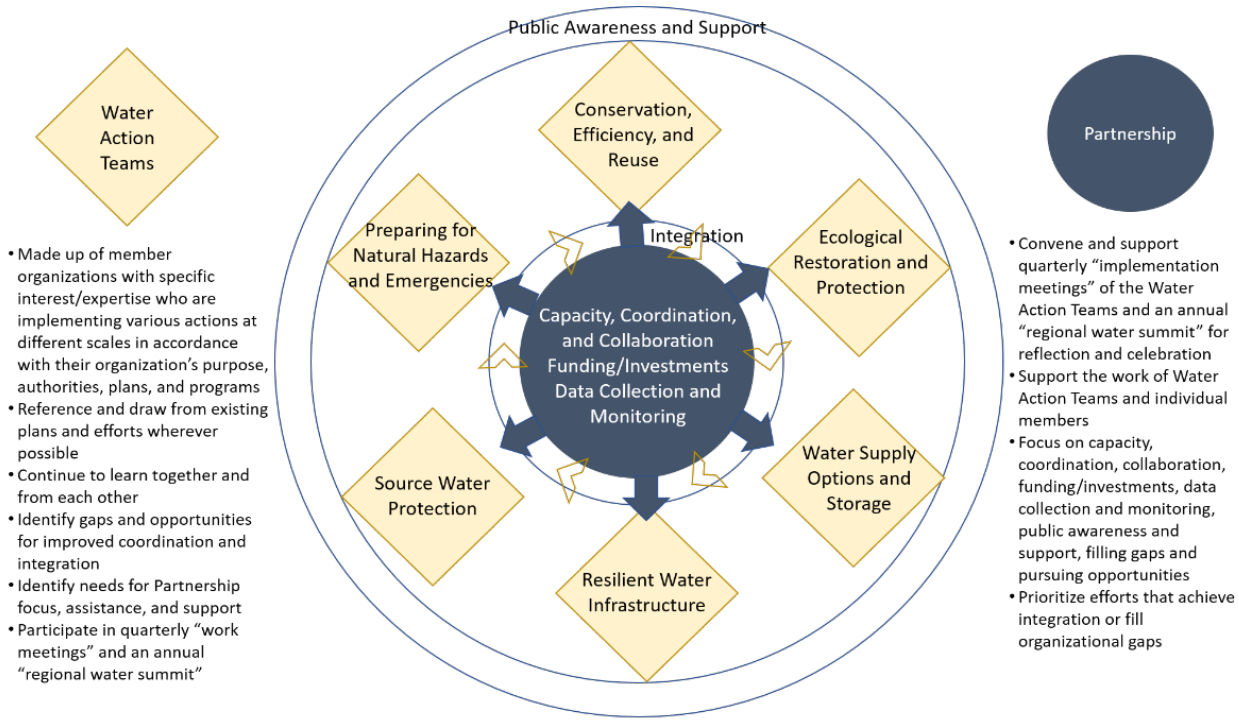

Figure 11. The nexus among water action teams and the Partnership, with the water action teams focusing on the action-oriented imperatives, and the Partnership focusing on the crossing-cutting imperatives.

Anatomy of the Mid-Coast Water Action Plan Implementation Table

Imperatives: Categories that address key water issues in the Mid-Coast region.

Objectives: High-level statements that outline what the Partnership seeks to achieve.

Actions: Specific activities that help achieve objectives.

Desired Outcomes: Specific changes that will occur as a result of implementing an action.

Potential Lead and Participants[20]

> **Potential Lead:** List of potential entities responsible for implementing actions.
> **Potential Participants:** List of potential participants that will collaborate with the leads to implement actions.

Timeline:

- **Phase 1** = Action is expected to begin implementation within1-3 years.
- **Phase 2** = Action is expected to begin implementation within 3-5 years.
- **Phase 3** = Action is expected to begin implementation within 5-10 years.

Budget: Estimated cost to implement the action.[21]

Performance Metrics: How the actions will be measured to track progress and determine if the action has been successfully implemented.

Metric Methodologies: Ways in which the performance metrics can be calculated.

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[20] Potential lead and partners have been identified for most of the actions. The entities listed in the table have not yet confirmed their roles as of the development of this plan. If and when they confirm interest in leading that action, the table will be modified to signal that intent.
Two-year work plans will be developed by the Partnership to highlight specific actions that will be implemented during that time frame.

[21] Budget estimates were based on partner input and reviewing other plans, and should be further validated during implementation.

Imperative 1. Public Awareness and Support

Public awareness of water issues in the Mid-Coast region of Oregon is critical to achieving the long-term goals the region has for delivering water sustainably for people and native fish and wildlife.

Objectives

- Promote tools and information for water conservation.
- Foster a culture of water conservation.
- Build capacity of constituents to advocate for state and federal resources and funding.
- Support training and professional development to ensure the availability of skilled water technicians·

Action Details

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
1.	**Develop and implement a public awareness and engagement campaign aimed at supporting the imperatives and actions in the Mid-Coast Water Action Plan, including raising awareness and understanding of regional water issues. Includes the following:**	Mid-Coast Planning Area residents, industries, and visitors are aware of and practicing water conservation measures. Public and private water suppliers are participating in water management and conservation planning and outreach to communities. There is uniform region-wide messaging about water use and conservation.	**Lead:** Education (all levels), interpretive facilities (Oregon Coast Aquarium, Hatfield Marine Science Center), regional water providers (private and public), Oregon Water Resources Department, Oregon State University Extension Service, Mid-Coast Watershed Council, Lincoln County Soil and Water Conservation District **Participants:** Water use industries, tourism industry, water rights holders	PHASES 1-2	$250,000	▪ Oregon Health Authority Drinking Water Source Protection Grants & Loans.[22] ▪ Oregon Community Foundation's Oregon Natural Resources Education Fund.[23] ▪ Autzen Foundation.[24] ▪ OWEB Partnership Stakeholder Outreach Grant. Georgia-Pacific Environment Grant Program. ▪ U.S. Economic Development Administration (EDA). ▪ EPA's Environmental Education (EE) Grants. ▪ Siletz Tribal Charitable Contribution Fund. ▪ Spirit Mountain Community Fund. ▪ Starker Forests Grant. ▪ Three Rivers Foundation.
	Conservation: a. Promote water conservation at local events, on the Mid-Coast Water Planning Partnership website and the websites of regional partners and entities, in news articles, in water bills, via social media, and through outreach materials to businesses, particularly in the hospitality industry. b. Develop drought declaration and audience-specific (e.g., self-supplied industrial water users) water conservation and curtailment messages.	a. and b. Consistent messaging throughout the Planning Area associated with drought and water curtailment is developed and distributed.	**Lead:** Mid-Coast water providers (e.g., Mid-Coast Water Conservation Consortium), Lincoln County Board of Commissioners **Participants:** OWRD, regional colleges and universities	PHASE 1	a. $50,000 b. $40,000	a) ▪ Georgia-Pacific Environment Grant Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ U.S. Economic Development Administration (EDA). ▪ EPA's Environmental Education (EE) Grants. ▪ Spirit Mountain Community Fund. ▪ Starker Forests Grant. ▪ Three Rivers Foundation. b) ▪ OWEB Partnership Stakeholder Outreach Grant. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ U.S. Economic Development Administration (EDA).

[22] (Eligible projects include but are not limited to outreach/education, monitoring efforts (outside of what is required by the state), restoration design and implementation, groundwater risk assessments. Publicly and privately-owned community and nonprofit non-community water systems are eligible to apply for DWSPF funding.

[23] Invites proposals from high school organizations providing natural resources education. Funding is available for natural resource related tools, equipment, technology, and other educational resources.

[24] Grants are awarded to smaller non-profit organizations; most often to groups with social service, arts, and culture, educational, environmental and/or youth-centered missions.

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
Regional Collaboration: c. Coordinate watershed and water system tours to increase awareness and understanding of regional and local water issues.	c. Increased understanding of regional and local water issues.	**Lead:** Mid-Coast Water Planning Partnership	PHASES 1-3	$100,000	▪ Meyer Memorial Trust Grant. ▪ OWEB Partnership Stakeholder Outreach Grant. ▪ Georgia-Pacific Environment Grant Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ National Communication Association Advancing the Discipline Grants. ▪ EPA's Environmental Education (EE) Grants. ▪ NFWF Five Star and Urban Waters Restoration Grant Program (Watershed only). ▪ U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant. ▪ Gray Family Foundation Environmental Education Grant. ▪ Siletz Tribal Charitable Contribution Fund. ▪ Spirit Mountain Community Fund. ▪ Starker Forests Grant. ▪ Three Rivers Foundation. ▪ Oregon Health Authority Source Water Protection Grants
Infrastructure: d. Develop a regional initiative/training to improve coordination and provide education to water providers on infrastructure financing and funding.	d. Water providers receive information on infrastructure financing and funding.	**Lead:** Water providers, Mid-Coast Water Conservation Consortium, Fund Managers **Participants:** Business Oregon, Rural Community Assistance Corporation, Oregon Association of Water Utilities	PHASE 1	$50,000	▪ Meyer Memorial Trust ▪ Oregon Community Credit Union (OCCU) Foundation. ▪ Georgia-Pacific Environment Grant Program. ▪ National Communication Association Advancing the Discipline Grants. ▪ U.S. Economic Development Administration (EDA). ▪ U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant. ▪ Siletz Tribal Charitable Contribution Fund. ▪ Spirit Mountain Community Fund. ▪ Starker Forests Grant. Three Rivers Foundation.
Education: e. Provide an internship program, hands-on training, and certification training for water technicians, which includes technician training on updating and implementing water management.	e. Each water provider has an updated water management and conservation plan that they are implementing.	**Lead:** Water providers, Oregon Coast Community College (OCCC) **Participants:** Samaritan Hospital	PHASE 2	$250,000	▪ Meyer Memorial Trust ▪ Oregon Community Credit Union (OCCU) Foundation. ▪ Georgia-Pacific Environment Grant Program. ▪ National Communication Association Advancing the Discipline Grants. ▪ U.S. Economic Development Administration (EDA). ▪ U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant. ▪ Siletz Tribal Charitable Contribution Fund. ▪ Spirit Mountain Community Fund. ▪ Starker Forests Grant. ▪ Three Rivers Foundation.
f. Identify or develop curriculum and materials/information for students and the public (community education) about their water sources, water management, and water conservation.	f. Students are learning about their water supply and the importance of water conservation, and they share that information with family members.	**Lead:** Mid-Coast Water Conservation Consortium, Lincoln County School District education (all levels), interpretive facilities (Oregon Coast Aquarium, Hatfield Marine Science Center), water providers, Oregon Water Resources Department, Oregon Coast	PHASE 2	$75,000	▪ Georgia-Pacific Environment Grant Program. ▪ National Communication Association Advancing the Discipline Grants. ▪ EPA's Environmental Education (EE) Grants. ▪ Gray Family Foundation Environmental Education Grant. ▪ Siletz Tribal Charitable Contribution Fund.

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
		Community College Community Education, Lincoln County Department of Health **Participants:** Educators and students, Lincoln County schools, general public			▪ Spirit Mountain Community Fund. ▪ Starker Forests Grant. ▪ Three Rivers Foundation.
Voluntary actions: g. Conduct outreach to encourage implementation of voluntary, incentive-based actions throughout the region, consistent with existing plans, such as the Mid-Coast Agricultural Water Quality Management Area Plan.	g. Voluntary, incentive-based actions effectively help to deliver on the goals on regional plans, including the Mid-Coast Agricultural Water Quality Management Area Plan.	**Lead:** Lincoln SWCD, OSU Extension, Mid-Coast Water Conservation Coalition, Oregon Water Resources Department, Self-supplied water users, MidCoast Watersheds Council **Participants:** All water users	PHASES 1-3	$50,000	▪ EPA's Environmental Education (EE) Grants.
Source Water Protection and Development: h. Inform self-supplied and public water users and residents and businesses within public water supply areas about water supplies and water protection measures, including proper well construction and maintenance, septic system maintenance, and proper use of landscape and other chemicals.	h. Self-supplied and public water users can access available water quality information concerning source water, implement measures to reduce impacts on source water quality, conduct regular inspection, maintenance, and repairs (as needed) of septic systems, and understand how to access and use available water quality data.	**Lead:** Oregon Health Authority, Oregon State University Extension, County, Oregon Department of Environmental Quality (for public water users and self-supplied users within public water supply areas), water providers	PHASES 1-3	$50,000	▪ Business Oregon Drinking Water Source Protection Fund. ▪ U.S. Economic Development Administration (EDA). ▪ EPA's Environmental Education (EE) Grants. ▪ Siletz Tribal Charitable Contribution Fund. ▪ Spirit Mountain Community Fund. ▪ Starker Forests Grant. ▪ Three Rivers Foundation.
i. Work with partners and agencies (e.g., Oregon State University Extension Service) to deliver information on safe pesticide application practices and vegetation management practices that reduce or eliminate pesticide use. Provide outreach on water quality impacts of pesticides and fertilizers associated with lawn management near streams and ponds. Share methods that reduce impacts and identify alternatives.	i. Pesticides are applied minimally and safely throughout the region. Options are developed that reduce impacts and provide alternatives to pesticides.	**Lead:** Oregon Department of Agriculture, Oregon Health Authority **Participants:** Organizations and individuals dedicated to reducing impacts from pesticides on soil and water resources.	PHASES 1-3	$50,000	▪ OWEB Partnership Technical Assistance Grant. ▪ Georgia-Pacific Environment Grant Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ U.S. Economic Development Administration (EDA). ▪ EPA's Environmental Education (EE) Grants. ▪ Siletz Tribal Charitable Contribution Fund. ▪ Spirit Mountain Community Fund. ▪ Starker Forests Grant. ▪ Three Rivers Foundation. ▪ OSU Extensive Service and Oregon Integrated Pest Management Center at OSU.
j. Conduct education in source water areas (including to those that may not be customers of the water provider) about drinking water sources, risks, choices, and strategies.	j. The public is aware of and supports source water protection measures.	**Lead:** Education (all levels), interpretive facilities (Oregon Coast Aquarium, Hatfield Marine Science Center), regional water providers (private and public), Oregon State University Extension Service, Oregon Department of Environmental Quality, Oregon Health Authority Drinking Water Programs **Participants:** 4-H programs, Samaritan Health Education	PHASES 1-3	$50,000	▪ Georgia-Pacific Environment Grant Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ National Communication Association Advancing the Discipline Grants. ▪ U.S. Economic Development Administration (EDA). ▪ EPA's Environmental Education (EE) Grants. ▪ NFWF Five Star and Urban Waters Restoration Grant Program. ▪ Siletz Tribal Charitable Contribution Fund. ▪ Spirit Mountain Community Fund. ▪ Starker Forests Grant. ▪ Three Rivers Foundation.

Action	Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
k. Connect private landowners with resources and information about best management practices to improve water quality and quantity.	k. Landowners are connected with resources and information about BMPs to improve water quality and quantity.	**Lead:** Local stewardship foresters, local Soil and Water Conservation District staff, and USDA Natural Resources Conservation Service, Oregon State University Extension Service, Oregon Department of Forestry **Participants:** All interested landowners	PHASE 1	$50,000	▪ Business Oregon Drinking Water Source Protection Fund. ▪ National Communication Association Advancing the Discipline Grants. ▪ EPA's Environmental Education (EE) Grants. ▪ Siletz Tribal Charitable Contribution Fund. ▪ Spirit Mountain Community Fund. ▪ Starker Forests Grant. ▪ Three Rivers Foundation.
			TOTAL	**$1.65M**	

Performance Metrics

- Annual increase in engagement with residents, visitors, water providers, and industry about water resources.
- Residents, visitors, and industries are aware of and are practicing a culture of water conservation and efficient use.
- Public and private water suppliers are participating in water resources outreach to communities.
- There is uniform region-wide messaging about water use and conservation and efficient use.

Metric Methodology

- Determine baseline data by assessing 1) existing outreach and engagement with the public on water-related issues 2) the effort of water suppliers to engage in outreach with the public, and 3) the uniformity of messaging about water use and conservation. A follow-up assessment is conducted 3-5 years later to determine increase in public engagement efforts and uniformity of messaging.
- Baseline data is determined by conducting a social survey with members of the public to assess their awareness and practices relative to water conservation.

Imperative 2. Regional Capacity and Collaboration

Regional collaboration enhances the resilience and capacity of the water delivery system and helps ensure reliable source water quality and quantity. Strategies to enhance regional collaboration may include pooling regional resources, providing technical information to landowners, and improving access to resources and funding.

Objectives

- Cultivate active coordination and collaboration among all regional water providers to improve access to resources and funding that enhance system resilience and reliable source water quantity and quality.
- Expand water conservation planning programs and initiatives.

Action Details

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
2	**Regional Collaboration: Support the creation of a feasible 50-year county-wide water supply plan. Incorporate regionally integrated plans that improve water system resiliency and adequately plan for future water supply development in the face of natural and human-caused disasters.**	Conduct an updated analysis of supply and demand (use OSU Study), evaluating both instream and out-of-stream needs, coupled with an alternatives analysis of potential strategies to reduce demand and/or increase supply (conservation, pricing, storage, reuse, new sources, etc.). Water providers collaborate to develop risk and resilience assessments and emergency response plans that are inter-connected where feasible.	**Lead:** Lincoln County, Regional Solutions, Lincoln County Water Systems Alliance (LCWSA), OHA regional engineers, water providers **Participants:** All Lincoln County water suppliers, regional stakeholders, OWRD and other state agencies), EPA, Rural Community Assistance Corporation	PHASES 1-3	$200,000	▪ Business Oregon/Infrastructure Finance
3	**Regional Collaboration: Support the development of organizational procedures for the Mid-Coast Water Conservation Consortium (MCWCC) and the Lincoln County Water Systems Alliance (LCWSA) that will facilitate the prioritization and funding of projects throughout the region.**	Explore organizational options for Mid-Coast Water Conservation Consortium that would enable entity to prioritize and fund projects throughout the region on behalf of members.	**Lead:** Mid-Coast Water Conservation Consortium, Lincoln County Water Systems Alliance **Participants:** Independent, governmental, and industrial water suppliers and users	PHASE 2	$50,000	▪ Meyer Memorial Trust Capacity Building Grant. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ Special Public Works Fund (SPWF). ▪ U.S. Economic Development Administration (EDA).
4	**Regional Collaboration: Strengthen/support the Mid-Coast Water Conservation Consortium to enhance water conservation, increase resiliency during shortages and emergencies, and pool resources of multiple water providers. Support enhanced coordination with state and federal entities outside of the Mid-Coast.**	Water suppliers have a strengthened ability to address water conservation issues, increase resiliency, and pool resources.	**Lead:** Mid-Coast Water Conservation Consortium, Lincoln County Water Systems Alliance **Participants:** Water providers	PHASE 1	$50,000	▪ Georgia-Pacific Environment Grant Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ U.S. Economic Development Administration (EDA).
5	**Regional Collaboration: Support and advocate for planning and development that minimizes impacts to floodplains and riparian areas, promoting Green Infrastructure (GI) methods and Low Impact Development (LID) practices.**	Natural storage (e.g., beaver protection) is supported, and open zoning regulations that promote marshland migration are encouraged. Planning and development minimize impacts to floodplains and riparian areas through the implementation of GIM and LID practices.	**Lead:** County planners, Department of Land and Conservation Development, municipal planning departments **Participants:** US Forest Service, Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, Oregon Department of Forestry	PHASES 1-2	$50,000	▪ Bureau of Reclamation Cooperative Watershed Management Grant (Phase I). ▪ OWEB Stakeholder Outreach and/or Technical Assistance Grant.
6	**Conservation: Develop and update water management and conservation plans for the Mid-Coast regional municipal and self-supplied direct water systems.**	Each water provider on the Mid-Coast has a recently updated water management and conservation plan appropriate in scale for the size of their customer accounts and demand.	**Lead:** Water providers and water users, all municipalities	PHASE 2	$100,000	▪ Business Oregon Drinking Water Source Protection Fund.
7	**Conservation: Coordinate water curtailment plans among water providers.**	Water providers coordinate water curtailment plans and messaging to the extent practicable, particularly those sharing water systems and sources.	**Lead:** Entities with shared water systems/sources, Mid-Coast Water Conservation Consortium **Participants:** Oregon Water Resources Department	PHASES 1-2	$15,000	▪ U.S. Economic Development Administration (EDA).
8	**Ecosystem Protection and Enhancement: Encourage municipalities to update/complete required stormwater management control plans to incorporate GI/LID practices, using statewide LID technical design guide, and update codes and ordinances that are barriers to implementing these practices. Assist smaller**	Municipal stormwater management control plans are updated and completed.	**Lead:** Municipalities	PHASE 3	$100,000	▪ U.S. Economic Development Administration (EDA). ▪ U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant. ▪ OWRD Water Projects Grants and Loans.

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
	communities, that are not currently required, in voluntarily developing similar stormwater management plans and technical design guides.					▪ ODEQ grants and technical assistance.
9	**Natural Hazards: Advocate for Emergency Response Plans (required for public water systems) address water system needs and specific vulnerabilities, and are interconnected to create a regional network during emergency situations.**	Public water system suppliers develop comprehensive plans that address the full suite of emergency measures needed locally and regionally.	**Lead:** Oregon Health Authority, Lincoln County, Oregon Department of Environmental Quality, water providers	PHASE 2	$50,000	▪ ODEQ Supplemental Environmental Projects (SEP) Program. ▪ USDA Rural Development Emergency Community Water Assistance Grant. ▪ NOAA Coastal Resilience Grants Program.
10	**Natural Hazards: Collaborate with emergency operations planners to identify highest priority water needs and develop alternative systems and plans. Identify opportunities and access for shared water available for addressing emergency interconnections.**	Water vulnerabilities are clearly articulated in updates to the Natural Hazard Mitigation Plan.	**Lead:** Water providers, Mid-Coast Water Conservation Consortium	PHASE 1	$125,000	▪ ODEQ Supplemental Environmental Projects (SEP) Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ Special Public Works Fund (SPWF). ▪ USDA Rural Development Emergency Community Water Assistance Grant.
11	**Natural Hazards: Support the development tiered communication trees to address: a) typical support needs b) response to localized emergencies affecting one or multiple Public Water Systems; and c) Cascadia Subduction Zone quake, volcanic eruption, regional wildfire. Provide communication alternatives for inoperable phone/internet (HAM resources; meeting locations and days/times).**	Ensure a mutual aid network exists on the coast to communicate and respond effectively during emergencies.	**Lead:** Lincoln County, water providers, MCWCC	PHASE 2	$50,000	▪ ODEQ Supplemental Environmental Projects (SEP) Program. ▪ Georgia-Pacific Environment Grant Program. ▪ USDA Rural Development Emergency Community Water Assistance Grant. ▪ NOAA Coastal Resilience Grants Program.
12	**Source Water Protection and Development: Develop regionally integrated Drinking Water Protection Plans to ensure that strategies and implementation plans are in place to minimize threats to water supply sources throughout the Mid-Coast. Advocate for funding to support the development and plan implementation.**	Drinking Water Protection Plans are developed to minimize contaminants from entering source waters.	**Lead:** Water providers, Lincoln County, water districts, municipalities, Oregon Department of Environmental Quality, Oregon Health Authority	PHASES 1-3	$100,000	▪ ODEQ clean water drinking/source water protection program. ▪ Georgia-Pacific Environment Grant Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ OHA Safe Drinking Water Act Loans/Grant Funds.
13	**Source Water Protection and Development: Create a Source Water Protection Plan, or multiple source-specific plans, to reduce, or minimize contaminants from entering source waters. Advocate for funding to support the development and implementation of these plans.**	A source water protection plan, or multiple plans, include actions that minimize contaminants entering source waters.	**Lead:** Lincoln County, water districts, city, Oregon Department of Environmental Quality, Oregon Health Authority	PHASE 2	$2,000,000	▪ ODEQ clean water drinking/source water protection program. ▪ Georgia-Pacific Environment Grant Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ OHA Safe Drinking Water Act Loans and Grant Funds.
			TOTAL		**$2.89M**	

Performance Metrics

- Water conservation projects are implemented and have measurable outcomes that aim to achieve the greatest return on investments.
- Updates to the Natural Hazard Mitigation plan clearly articulate water vulnerabilities.
- A mutual aid network is created along the coast, and water providers sign up for ORWARN.
- A 50-year county-wide water supply plan is created.
- Mid-Coast public water providers have up-to-date drinking water protection plans that are regionally integrated.

Metric Methodology

- A social survey is conducted to assess the extent to which Mid-Coast land managers understand and are applying Ecosystem Best Management Principles and Practices. A social survey is conducted 3-5 years later to assess increases in awareness, understanding, and implementation.
- Spatial analyses are conducted, and locations on the landscape are identified to implement conservation projects that achieve the greatest return on investment
- A mutual aid network is created and tested, confirming its capacity to respond effectively during emergencies.

Imperative 3. Monitoring and Data Sharing

Objectives

- Improve our baseline understanding of water conditions in the region. Improve the coordination and effectiveness of water quality, quantity, and habitat monitoring programs throughout the region.
- Assess the levels and presence/absence of contaminants in Mid-Coast waters and describe negative effects to human health or aquatic life.
- Sample throughout the Mid-Coast to accurately identify the quantity and type of toxics entering source waters to assess potential risks to both drinking water quality and aquatic life.
- Provide self-supplied water users with adequate and timely data to determine regional, local, or site-specific water quality contamination issues that may pose a health risk.

Action Details

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
14	**Implement more efficient advanced metering infrastructure to enable faster identification of leaks and shortages, and support best practices for water providers to meet industry standards for documenting water loss.**	Real-time information on water use and water loss is documented to better manage water and engage everyone in water conservation.	**Lead:** Water providers, Mid-Coast Water Conservation Consortium Participants: Oregon Water Resources Department	PHASES 1-3	$3,000,000	▪ USDA Rural Development Water and Waste Disposal Loan and Grant Program.
15	**Recommend installation and use of flow meters to gain a more accurate estimate of water use in the region.**	Installation of flow meters on withdrawals is prioritized using an established set of criteria.	**Lead:** Local Soil and Water Conservation District (with resources), Oregon Water Resources Department		$100,000	▪ OWEB Monitoring Grant.[25] ▪ OWRD Water Measurement Cost Share Program
16	**Fully fund, install, and monitor real-time stream gauging stations throughout region in priority locations and times of year when they are needed most to accurately assess source water and enable innovative demand-reduction actions during periods of critical ecological need.**	Identify sites for highest priority gages. Funding and staff secured to maintain monitoring network. An updated basin study that addresses water uncertainties in the Mid-Coast region (improved granularity of measurements). Exploration of newer AI technologies is supported by the partnership. Real-time river monitoring/gauging is conducted in priority locations.	**Lead:** US Geological Survey, Oregon Water Resources Department, private landowners, Oregon Watershed Enhancement Board, watershed councils, organizations, water providers, municipalities, Lincoln County **Participants:** Oregon Department of Fish and Wildlife	PHASE 1	$200,000	▪ OWEB Monitoring Grant.[26] ▪ USGS National Streamflow Information Program (NSIP). ▪ OWRD (General Funds: Water Measurement Cost Share Program)
17	**Develop and implement a coordinated long-term water quality monitoring program throughout the region (e.g., source water, streams, estuaries) to improve understanding of current conditions and event-caused conditions (i.e., storm, low-flow) for nutrients, bacteria, temperature, dissolved oxygen, pH, turbidity and other specific contaminants identified by DEQ, including those that contribute to harmful algal blooms (HAB)s. Collect water samples to identify pollutant sources (location, source, practices influencing input, transport and fate of pollutants). Advocate for additional sampling in headwaters (where herbicides and pesticides are applied) and at municipality intakes.**	A coordinated long-term water quality monitoring program is developed for the region that meets the objectives described. Real time data sharing occurs among municipalities, and there is frequent testing of source waters. Samples are taken in headwaters and public drinking water intakes at the frequency needed to track source water quality status. Outreach and incentive programs reach landowners who then modify practices and implement best management practices.	**Lead:** Oregon Department of Environmental Quality, Oregon Health Authority, US Forest Service, Oregon Water Resources Department, Counties, cities, Mid-Coast Water Conservation Consortium, Lincoln County Water Systems Alliance, state and private forestry sector (Oregon Department of Forestry), Agricultural sector (Oregon Department of Agriculture lead), Oregon Department of Fish and Wildlife, Mid-Coast Watershed Council	PHASES 1-2	$1,000,000	▪ Oregon Health Authority Drinking Water Source Protection Grants & Loans.[27] ▪ ODEQ Supplemental Environmental Projects (SEP) Program. ▪ ODA water quality funds provided to SWCD. ▪ OWEB Monitoring Grant. U.S. Economic Development Administration (EDA). ▪ Oregon Watershed Enhancement Board

[25] Must be tied to existing or potential future project.

[26] Must be tied to existing or potential future project.

[27] Eligible projects include but are not limited to outreach/education, monitoring efforts (outside of what is required by the state), restoration design and implementation, groundwater risk assessments. Publicly and privately-owned community and nonprofit non-community water systems are eligible to apply for DWSPF funding.

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
18	**Conduct comprehensive and ongoing water testing, and use results to guide best management practice implementation, restoration, etc. to address water quality impairments.**	Ongoing and comprehensive water testing is conducted, and the results are used to guide land and resource management activities. Education and outreach and testing are conducted on private wells on a regular basis.	**Lead:** Oregon Department of Environmental Quality, Oregon Health Authority, US Forest Service, Lincoln Soil and Water Conservation District, Lincoln County	PHASES 1-3	$100,000	▪ ODA water quality funds provided to SWCD. ▪ ODEQ Supplemental Environmental Projects (SEP) Program. ▪ U.S. Economic Development Administration (EDA).
19	**Develop a coordinated network of people conducting stream flow monitoring and water quality monitoring to share resources and data. Explore cost-effective ways to incorporate volunteers in data collection to complement gauging network.**	A robust coordinated network of volunteers is conducting stream flow and water quality monitoring and sharing that information via a Mid-Coast network.	**Lead:** Lincoln County **Participants:** Mid-Coast Water Conservation Consortium, Soil and Water Conservation District, Oregon Water Resources Department, Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, Oregon Watershed Enhancement Board, Salmon-Drift Creek Watershed Council, US Forest Service	PHASE 2	$100,000	▪ ODA funding to SWCD. ▪ OWEB Monitoring Grant. ▪ U.S. Economic Development Administration (EDA).
20	**Support the aggregation and update of current self-supplied water system databases, including system description, system status, and system needs. Determine what exists from current databases. Track wells going dry via self-reporting. NOTE: Oregon Explorer database group will be discussing.**	There is comprehensive regional knowledge of self-supplied water system information in the Mid-Coast Region.	**Lead:** Lincoln County **Participants:** Private well drillers, private septic companies, Oregon Water Resources Department well log database	PHASE 1	$125,000	▪ Oregon Health Authority Domestic Well Safety Program (DWSP)
21	**Develop a water monitoring database for data entry and access by multiple entities.**	A water monitoring tool that consolidates water data for the public and water managers to access and use. The Mid-Coast serves as a pilot to demonstrate water quality and quantity database sharing.	**Lead:** Inter-agency Stream Team **Participants:** Local, State, and Federal agencies, and private citizens	PHASE 1	$100,000	▪ OWEB Monitoring Grant. ▪ U.S. Economic Development Administration (EDA).
			TOTAL		**$4.725M**	

Performance Metrics

- 75% of municipal connections in the Mid-Coast region have meters/associated infrastructure (apps, online platform) within 5 years.
- Water providers are reporting unaccountable water loss on an annual basis as well as progress made.
- By 2030, all water providers in the Mid-Coast region demonstrate systems have 10% or less unaccountable water loss.

Metric Methodology

- Percent of connections in the region that have meters. Five years later, the percent of connections is reassessed.
- Baseline data is collected to ensure water providers are documenting unaccountable water loss. Ten years later, an assessment is conducted to ensure all water providers in the region has 10% or less unaccountable water loss.
- Baseline data is created by conducting a social survey to assess awareness and understanding of water information by the public. A follow-up survey is conducted 3-5 years later to monitor changes in awareness and understanding.

Imperative 4. Water Conservation, Efficiency and Reuse

Water conservation is the beneficial reduction in water loss, waste and/or use that results in businesses and people changing behaviors by conserving, recycling and re-using water. Water efficiency minimizes the amount of water used to accomplish a function, task, or result, and relies on water rates that reflect the true value of water. Water conservation incorporates water treatment, recycling, and well-engineering products, and fixtures (Source: Water Footprint Calculator[28]). Indoor water conservation actions may include turning off running water while brushing teeth and operating washing machines and dishwashers only when loads are full. Outdoor water conservation actions may include watering lawns only when necessary, watering lawns during the cool part of the day, mulching trees, and rainwater catchment for non-potable uses. Examples of water efficient actions include using metering faucets and low-flow showerheads and toilets. Due to limited water availability for new out-of-stream uses across the Mid-Coast region as well as the need to restore and protect instream values, water conservation may be one of the most cost-effective ways to meet future water needs of the region while increasing water security and resiliency for all users. The ultimate goal of Imperative 4 is to provide water users with improved access to information, incentives, funding, audits, and resources to help them appreciate the value of water, make conservation a part of everyday life, and to create an ethic that embraces the value of the conservation of water.

Objectives

- Effectively use limited water supplies, especially during times of water shortage. Reduce water use.

Action Details

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
22	**Improve understanding of Oregon's existing water reuse regulations[29], and the opportunities and barriers (e.g., health issues) to using recycled and gray water for all allowed uses.** **Encourage development of comprehensive water reuse programs at appropriate scales.**	Local stakeholders evaluate current water reuse regulatory programs and options; identify local issues and barriers, and develop pilot/model projects or programs to assess and implement realistic, safe local or regional options for the use of recycled water.	**Lead:** Oregon Department of Environmental Quality, Oregon Water Resources Department, Oregon Health Authority, water providers, Lincoln County **Participants:** Homeowners and businesses, potentially other state agencies, Oregon Department of Fish and Wildlife	PHASE 2	$150,000	▪ Business Oregon Drinking Water Source Protection Fund. ▪ OWRD Water Projects Grants and Loans.
23	**Investigate and share information on methods of reusing treated sewage plant water and water at water treatment plants (e.g., backwash) and regional industries for potable, agricultural, and industrial uses.**	Potable and industrial water users receive information on successfully implemented innovative strategies to meet water needs through reuse. Lower levels of solids are achieved in pre-treatment programs (e.g., side stream; potential energy sources) to maintain infrastructure longer. Reuse of backwash water is encouraged.	**Lead:** Mid-Coast Water Conservation Consortium, Water providers **Participants:** OR DEQ, OHA, OWRD, Clean Water Services (Hillsboro, Oregon - cleanwaterservices.org), WateReuse (https://watereuse.org)	PHASE 1	$100,000	▪ Georgia-Pacific Environment Grant Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ OWRD Water Projects Grants and Loans.
24	**a) Incentivize commercial and industrial facilities to conduct water audits, identifying water loss and implementing conservation, recycling, and re-use strategies and technologies.** **b) Evaluate and potentially revise water pricing strategies commensurate with actual delivery costs as well as other strategies to stimulate water conservation and re-use while raising revenue for water conservation**	24a: Commercial and industrial water users complete water audits resulting in improved efficiency and reduced water use. Where possible, these users implement water reuse approaches. 24b: Completion of a comprehensive rate study that considers tiered rate methodology tied to achieving the actual value of investments in water conservation, recycling, and re-use compared to the cost of developing new water sources. Assure a fair allocation of costs between residents and businesses. Results of analysis/study are shared with the public.	**Lead:** Water providers, commercial and industrial water users **Participants:** Oregon Water Resources Department, Oregon State University	PHASE 1	$150,000	▪ Georgia-Pacific Environment Grant Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ Special Public Works Fund (SPWF). ▪ U.S. Economic Development Administration (EDA). ▪ U.S. Department of Housing and Urban Development Sustainable Communities Regional Planning Grant.

[29] https://www.oregon.gov/deq/wq/programs/Pages/Water-Reuse.aspx

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
	investments (e.g., improved efficiency at commercial facilities).					
25	**Work with the NRCS to develop a Conservation Implementation Strategy to provide incentives and technical support to agricultural irrigators interested in making improvements, such as increased efficiencies to minimize evaporation losses.**	Agricultural irrigators that are able to access incentives and other cost-share opportunities to conserve water, enhance efficiencies, and replace aging systems.	**Lead:** Natural Resources Conservation Service, Lincoln Soil and Water Conservation District, Oregon Department of Agriculture **Participants:** Agricultural irrigators (engage in development and implementation of strategy), McKenzie River Trust	PHASES 1-2	$1,500,000	▪ USDA NRCS CIG Grant. ▪ OWRD Water Projects Grants and Loans. ▪ Clean Water State Revolving Fund (CWSRF).[30] ▪ USDA SEARCH - Special Evaluation Assistance for Rural Communities and Households Program. ▪ OHA's Safe Drinking Water Revolving Loan Fund (SDWRLF). ▪ Business Oregon Community Development Block Grant (CDBG) Program. ▪ USDA Rural Development Water & Waste Disposal Direct Loan & Grant Program. ▪ EPA Nonpoint Source Section 319 Grants. ▪ USDA Home and Waste Water Loan and Grant Programs (Septic Systems Repair/ Replacement). ▪ WaterSMART Water and Energy Efficiency Grants.
26	**Identify and develop voluntary incentives for water conservation.**	Develop and implement incentives (rebates on equipment, tax breaks, monthly water bills, free water-saving items, recognition (awards or labels) for businesses to stimulate voluntary water conservation.	**Lead:** Oregon Health Authority, Water providers **Participants:** Oregon Water Resources Department, water users, Oregon Department of Environmental Quality, US EPA	PHASES 2-3	$100,000	▪ Georgia-Pacific Environment Grant Program.
27	**Using the Water Management Economic Assessment Model[31], develop a suite of adaptation measures (e.g., storage investments, conservation rebate programs, and new pricing models) to address existing and predicted water shortages in the region.**	Updated analysis of supply and demand (use OSU Study) coupled with an alternatives analysis of potential strategies to reduce demand and/or increase supply (conservation, pricing, storage, reuse, etc.). Watershed Management Plans are developed that incorporate water source strategies. Document updated supply and demand projections for individual users and the region as a whole, including an analysis of alternatives and costs/benefits to meet current and future needs.	**Lead:** Oregon State University, Oregon Water Resources Department **Participants:** Mid-Coast Water Planning Partnership	PHASES 1-2	$25,000	▪ OWRD Feasibility Study Grants. ▪ BOR WaterSMART Basin Studies. ▪ Business Oregon Drinking Source Protection Fund. ▪ Special Public Works Fund (SPWF). ▪ Safe Drinking Water Revolving Loan Fund (SDWRLF). ▪ EPA Drinking Water State Revolving Fund (DWSRF).
			TOTAL		**$2.025M**	▪

Performance Metrics

- Measurable increase in the amount of recycled water derived from domestic and industrial sources for beneficial purposes and gray water used by water consumers in the Mid-Coast region.
- Increase in the availability and use of water conservation incentives among all stakeholders.

[30] Will fund irrigation modernization projects for water efficiency if it benefits water quality.

[31] (Oregon State University, Oregon Water Resources Department, and MCWPP are developing a Water Management Economic Assessment Model using existing water supply, pricing, and consumption data integrated with climate change projections to simulate the impact of future water shortages and illustrate trade-offs among potential adaptation measures.)

- A culture of water conservation is furthered through developers as well as municipal water providers (planning and public works departments/committees) embracing and incorporating water saving technologies and design strategies.
- By 2023, an RCPP (RCPP – Regional Conservation Partnership Program) is established in the region, incorporating existing global technologies to enhance irrigation efficiencies.

Metric Methodology

- Baseline data is collected via a survey and assessment to determine levels of gray water and recycled water produced and used by consumers, to document existing water conservation incentives, and to assess understanding and implementation of water saving technologies and design strategies by water providers. In 3–5 years, the assessment and survey are repeated to track progress.

Imperative 5. Resilient Water Infrastructure

Sustaining the collection and distribution systems, treatment plants, and other infrastructure that collects, treats, and delivers water requires strategies that address aging infrastructure, support a more resilient infrastructure, and advance training and professional development to ensure the availability of skilled water technicians.

Objectives

- Create more resilient infrastructure.
- Replace and upgrade aging infrastructure with more resilient infrastructure.
- Create redundancy, water system interconnections, and alternative sources of water to ensure access to safe drinking water in case of emergencies.
- Build capacity of partners to advocate for and secure state and federal resources and funding for infrastructure.

Action Details

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
28	**Support upgrading and maintaining water metering system infrastructure, where possible. Note: Automated read systems (not SMART) can be installed at reduced cost.**	Install smart water grid systems in Mid-Coast communities. Achieve water balance in community systems (Stream to Tap).	**Lead:** Water providers, MCWCC	PHASE 2	$1,500,000	▪ OWRD Water Projects Grants and Loans. ▪ OHA's Safe Drinking Water Revolving Loan Fund (SDWRLF). ▪ Business Oregon Community Development Block Grant (CDBG) Program. ▪ Business Oregon Special Public Works Fund (SPWF). ▪ Business Oregon Water/Wastewater Funding Program. ▪ Rural Community Assistance Corp. (RCAC) Loan Fund. ▪ USDA Rural Development Water & Waste Disposal Direct Loan & Grant Program. ▪ WaterSMART Water and Energy Efficiency Grants.
29	**Use the latest technologies (e.g., In system monitoring and controls, pumping efficiency, automating, and controlling potential zone isolations) available when retrofitting, or replacing, water infrastructure.**	Isolations are implemented in emergencies.	**Lead:** Water providers	PHASE 3	$200,000	▪ OWRD Water Projects Grants and Loans. ▪ Business Oregon's Community Development Block Grant (CDBG) Program. ▪ Business Oregon Special Public Works Fund. ▪ Business Oregon Water/Wastewater Funding Program. ▪ USDA Rural Development Water & Waste Disposal Direct Loan & Grant Program. ▪ USDA Rural Development Water and Waste Disposal Loan and Grant Program. ▪ WaterSMART Water and Energy Efficiency Grants.

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
30	**Address distribution system failures by installing earthquake valves in water tanks to retain water even if distribution system fails.**	Expanded water system monitoring and controls are in place.	**Lead:** Water providers	PHASE 2	$1,000,000	▪ OWRD Water Projects Grants and Loans. ▪ Business Oregon's Community Development Block Grant (CDBG) Program. ▪ Business Oregon Special Public Works Fund. ▪ Business Oregon Water/Wastewater Funding Program. Special Public Works Fund (SPWF). ▪ Rural Community Assistance Corp. (RCAC) Loan Fund. ▪ USDA Rural Development Water & Waste Disposal Direct Loan & Grant Program. ▪ WaterSMART Water and Energy Efficiency Grants.
31	**Evaluate alternatives for both natural and built (human-made) water storage with the planning area.** **For built systems, identify and perform feasibility studies needed to assess whether projects are viable using established and agreed-upon criteria (economic, environmental, regulatory, etc.).** **For natural storage "systems", identify feasibility studies needed to assess project viability using established and agreed-upon criteria. For those that appear viable, developed estimates of seasonal water storage and release.**	**Feasibility studies are conducted to identify viable natural and built storage projects in the planning area.** **For Projects that meet agreed-upon criteria (economic, environmental, regulatory, etc.), funding proposals are developed and submitted for design, engineering, and implementation.** A combination of feasible natural and built storage systems increase in the region.	**Lead:** Mid-Coast Watersheds Council **Participants:** US Geological Survey, state and federal agencies	PHASE 1	$150,000	▪ Business Oregon Drinking Water Source Protection Fund. ▪ Safe Drinking Water Revolving Loan Fund (SDWRLF). ▪ EPA Drinking Water State Revolving Fund (DWSRF). ▪ EPA Drinking Water State Revolving Fund (DWSRF). ▪ OWRD Water Projects Grants and Loans ▪ BOR WaterSMART Basin Studies. ▪ OWRD Water Projects Grants and Loans. ▪ OWEB Technical Assistance.
32	**Support the expansion of the state-supported revolving fund (including developing a new fund for self-suppliers) to accelerate water infrastructure improvements. Improve access to funding by enhancing coordination and collaboration with communities).**	Funding options for individual providers and the region are well understood, and a strategy exists to upgrade and maintain critical infrastructure. Mid-Coast water providers have capital improvement plans.	**Lead:** Business Oregon (1-stop program) (Infrastructure Finance Authority) **Participants:** Mid-Coast Water Conservation Consortium (educational role for municipalities), Oregon Water Resources Department, and other funding agencies	PHASE 3	$4,000,000	▪ OWRD Water Projects Grants and Loans. ▪ USDA Rural Development Circuit Rider Program. ▪ OWRD has a $14-20M biennial revolving fund. ▪ Business Oregon Community Development Block Grant (CDBG) Program. ▪ Business Oregon Water/Wastewater Funding Program. ▪ USDA Rural Development Water and Waste Disposal Loan and Grant Program. ▪ WaterSMART Water and Energy Efficiency Grants. Safe Drinking Water Revolving Loan Fund (SDWRLF). Special Public Works Fund (SPWF).
33	**Identify funding programs to support infrastructure enhancements that advance sustainable and secure water solutions for the region. Study how other cities and**	Lincoln SWCD has a stable funding source to work with agricultural and other landowners.	**Lead:** Water providers	PHASE 2	$200,000	▪ OWRD Water Projects Grants and Loans.

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
	counties have funded their infrastructure improvements through time and manage water infrastructure assets.					▪ OHA's Safe Drinking Water Revolving Loan Fund (SDWRLF). ▪ Business Oregon Water/Wastewater Funding Program. ▪ USDA NRCS CIG Grant. ▪ Special Public Works Fund (SPWF). ▪ Rural Community Assistance Corp. (RCAC) Loan Fund. ▪ USDA Rural Development Water & Waste Disposal Direct Loan & Grant Program. ▪ USDA Rural Development Water and Waste Disposal Loan and Grant Program. ▪ WaterSMART Water and Energy Efficiency Grants.
34	**Establish a community revolving loan program for infrastructure improvements for septic systems.**	Low interest loans are available to individual property owners on a consistent basis.	**Lead:** Lincoln County, Craft3, OSU Extension Well Stewardship Program **Participants:** Oregon Department of Environmental Quality, Natural Resources Conservation Service, special districts and other small water providers, Lincoln Soil and Water Conservation District, Devil's Lake Water Improvement District, Oregon Water Resources Department	PHASE 2	$200,000	▪ Craft3 Loan Program; ▪ DEQ CWSRF community loans
			TOTAL		**$7.25M**	

Performance Metrics

- Annual increases in the percent of aging and inefficient water infrastructure that is replaced and enhanced.

Metric Methodology

- Baseline data is collected by conducting an assessment and surveying municipalities and water providers to compile and document aging infrastructure that needs to be replaced, to assess the scope and cost of installing smart water grid systems throughout the region, to ensure water providers can isolate during emergencies, to document how other cities and counties fund their infrastructure projects, to assess the existence and extent of funding available to support infrastructure enhancements. In 3-5 years, conduct assessment/survey to evaluate progress made in creating a resilient water infrastructure.

Imperative 6. Source Water Protection

The 1972 Clean Water Act specifies three categories for protection of all water sources: The physical connectivity, the biological health, and chemicals introduced from point, or non-point sources. Source water includes the rivers, streams, lakes, reservoirs, springs, and groundwater that deliver water to public drinking water supplies and private wells. Protecting source water reduces treatment costs, protects water quality for wildlife and human uses, and helps ensure the availability of water. Strategies to protect source water depend on the source, and include protection of riparian habitats, stream bank stabilization, land protection/easements, best management practices for agricultural and forestry activities, local ordinances to limit activities in source water or wellhead protection areas, emergency response plans, and outreach and education. Source: Environmental Protection Agency[32].

Objectives

- Assess the levels and presence/absence of contaminants in Mid-Coast waters and describe negative effects to human health.
- Sample throughout the Mid-Coast to accurately identify the quantity and type of toxics entering source waters to assess potential risks to both drinking water quality and aquatic life.
- Provide self-supplied water users with adequate and timely data to determine regional, local, or site-specific water quality contamination issues that may pose a health risk.
- Assess the levels and presence/absence of contaminants in Mid-Coast waters and describe negative effects to human health.
- Consistently attain water quality standards that protect drinking water and other beneficial uses.
- Anticipate and prepare for the effects of climate change stressors, which are predicted to influence precipitation, temperature, coastal inundation, ecosystem function, and water quality.
- Prioritize restoration work and support land management practices that reduce contaminants of concern to drinking water.

Action Details

Actions		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
35	**Identify, fund, and implement high priority regional source water protection activities.**	Explore and implement mechanisms for regional source water protection (e.g., carbon credits, carbon exchange, tax credits, and acquisition opportunities) are explored and implemented.	**Lead:** Water providers **Participants:** Mid-Coast Water Planning Partnership, Oregon Department of Environmental Quality	PHASES 1-2		▪ BOR WaterSMART Basin Studies. ▪ Georgia-Pacific Environment Grant Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ EPA Drinking Water State Revolving Fund (DWSRF). ▪ Starker Forests Grant.
36	**Support the reduction of nutrient, turbidity, and bacteria inputs and emerging contaminants of concern (e.g., PFAS, PFOA, PFOS, pharmaceuticals, etc.) to source water from all sectors using the latest technology.**	Link property owners and residents to existing programs (e.g., Craft3 for septic system replacement/repair loans, OSU Extension Service, land management workshops, etc.). Homeowners improve practices, reduced nutrient contributions from all Sectors/land uses.	**Lead:** Oregon Department of Environmental Quality, Oregon Health Authority (Step a). Oregon Health Authority, Oregon State University Extension Services, Lincoln County Soil and Water Conservation District, Oregon Department of Agriculture (Step b).	PHASES 1-3	$1,000,000	▪ Business Oregon Drinking Water Source Protection Fund. ▪ EPA Clean Water State Revolving Fund.
37	**Enhance contamination prevention measures for reservoirs, surface water intakes, springs, and/or wellheads.**	Water reservoirs in the Mid-Coast region are secure.	**Lead:** Water providers, Mid-Coast Water Conservation Consortium	PHASE 1	$250,000	▪ OWRD Feasibility Study Grants. ▪ OHA's Safe Drinking Water Revolving Loan Fund (SDWRLF). ▪ BOR WaterSMART Basin Studies. ▪ Business Oregon Community Development Block Grant (CDBG) Program. ▪ Business Oregon Water/Wastewater Funding Program. ▪ Business Oregon Drinking Water Source Protection Fund.

[32] https://www.epa.gov/sourcewaterprotection/basic-information-about-source-water-protection

Actions		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
						▪ OWRD Water Projects Grants and Loans.
38	**Assess and evaluate harmful algal bloom events that affect source water to identify potential contributing sources, and educate and support the reduction of nutrient inputs to source water from all sectors to prevent algal blooms (e.g., promote agricultural nutrient management plans, grants to reduce inputs, well water nitrate screening, well water and septic system education, low-input gardening).**	The causes of harmful algal blooms affecting source water are investigated, and projects to education and/or reduce contributing sources are implemented.	**Lead:** Water providers **Participants:** Land managers	PHASES 1-3	$100,000	▪ ODEQ Supplemental Environmental Projects (SEP) Program. ▪ Clean Water State Revolving Fund. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ EPA Environmental Justice Small Grants Program. ▪ For agriculture land, ODA funds to SWCD.
39	**Advocate for integrated pest management (e.g., minimize aerial spraying in watersheds adjacent to source water; promote hand clearing in riparian zones (versus hand spraying); support notification of all water treatment facilities when and where spraying will occur), as well as notification of downstream water users who are not on municipal water systems and rely on source water for domestic use.**	Agencies and OSU deliver education on safe pesticide application practices; possible formation of a Pesticide Stewardship Partnership; reduction and/or elimination of pesticide use.	**Lead:** Pesticide Stewardship Partnership **Participants:** Oregon Department of Agriculture, Oregon Department of Forestry, Oregon State University Extension Service, Oregon Department of Environmental Quality, Oregon Health Authority, Oregon Water Resources Department US Forest Service, Lincoln County, water providers	PHASES 1-3	$100,000	▪ OWEB Stakeholder Engagement Grant. ▪ Georgia-Pacific Environment Grant Program. ▪ Meyer Memorial Trust Healthy Environment Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ ODFW Access and Habitat Program. ▪ Oregon Integrated Pest Management Center at OSU.
40	**Furthering a working lands concept, advocate for incentives, and other strategies, that promote silvicultural practices that support restoration of watershed ecological function and protect drinking water source areas.**	Incentives and other strategies are developed that support watershed ecological function and protection of source drinking water.	**Lead:** Mid-Coast Water Planning Partnership, Oregon Department of Forestry, US Forest Service, Bureau of Land Management, and any other federal land management agencies	PHASES 1-3	$100,000	▪ Oregon Watershed Enhancement Board Conservation Reserve Enhancement (CREP) TA Program. ▪ OWEB Small Grant Program. ▪ OWEB Operating Capacity Grant. ▪ OWEB Stakeholder Engagement Grant. ▪ OWEB Restoration Grant. ▪ Georgia-Pacific Environment Grant Program. ▪ Meyer Memorial Trust Healthy Environment Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ Clean Water State Revolving Fund. ▪ USDA NRCS Emergency Watershed Protection Program. ▪ USFWS Landowner Incentive Program. ▪ NFWF Five Star and Urban Waters Restoration Grant Program. ▪ ODFW Access and Habitat Program. ▪ ODFW Wildlife Habitat Conservation and Management Program. ▪ ODFW Riparian Lands Tax Incentive Program.
41	**Protect critical lands within drinking water source areas through acquisition, conservation easements, or other tools that prevent degradation and/or impacts to source water quality.**	Critical lands within drinking water source areas are adequately managed for water quality protection.	**Lead:** McKenzie River Trust, Wetlands, Conservancy, The Nature Conservancy **Participants:** Mid-Coast Watersheds Council, municipalities, Mid-Coast Water Planning Partnership		$10,000,000	▪ Bureau of Reclamation WaterSMART Cooperative Watershed Management Program (Phase I or Phase II Implementation). ▪ Meyer Memorial Trust Healthy Environment Program. ▪ Business Oregon Drinking Water Source Protection Fund.

Actions		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
						▪ Business Oregon Drinking Water Source Protection Fund. ▪ USDA NRCS Emergency Watershed Protection Program. ▪ Safe Drinking Water Revolving Loan Fund (SDWRLF). ▪ USDA Rural Development Water and Waste Disposal Loan and Grant Program. ▪ ODFW Access and Habitat Program.
			TOTAL		**$15.5M**	

Performance Metrics

- Source (raw) water contains decreasing levels of nutrients, fine sediment/turbidity and bacteria, toxics (e.g., pesticides and emerging contaminants of concern) are not detected.
- Measures are taken to enhance reservoir security to protect from contamination.
- Incentives are created and promoted to restore watershed ecological function and promote protection of source drinking water areas.
- An increasing percentage of acreage in drinking water source areas is protected from land-use activities that could negatively impact water quality and natural hydrology.

Metric Methodology

- Baseline information is summarized on existing water available for summer withdrawals (accounting for instream demand/needs), current range of levels (concentration and load) of nutrients, turbidity, bacteria, and other contaminants in raw source water. Comparisons are made within 3-5 years later to assess changes in these levels.
- Municipal water providers document enhancements to reservoir security.
- Baseline information and changes are tracked through time to assess protection from contamination for reservoirs, intakes, springs, and wellheads.
- Baseline data is collected on existing incentives. Comparisons are made 3-5 years later via an assessment to document progress in creating incentives.

Imperative 7. Planning for Water Supply Development Needs (including assessment)

Streams in the Mid-Coast Planning area have high streamflow during the winter months (January-March) and low streamflow during the summer/fall months (August-October) as a result of seasonal precipitation patterns. Generally, Mid-Coast groundwater is not very productive because of low permeability and low storage capacity of the regional rock formations. Developing additional sources of water supply and storage, both human-made and natural, will create a sustainable water supply that meets the needs of people and native fish and wildlife.

Objective

- Develop a sustainable water supply for consumptive uses that also protects the environment, supports healthy watersheds, and is resilient to climate change stressors and natural hazards.

Action Details

Actions		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
42	**Seek additional and alternative sources of water for development in the region.[33]**	Additional sources of water that are available for development are identified in the region.	**Lead:** Lincoln County, Department of Land and Conservation Development, Lincoln County Water Systems Alliance **Participants:** Mid-Coast Water Conservation Consortium, Oregon Water Resources Department	PHASE 1	$100,000	▪ OWRD Feasibility Study Grants. ▪ BOR WaterSMART Basin Studies. ▪ Business Oregon Drinking Source Protection Fund. ▪ Special Public Works Fund (SPWF). ▪ Safe Drinking Water Revolving Loan Fund (SDWRLF). ▪ EPA Drinking Water State Revolving Fund (DWSRF).
43	**Using the Water Management Economic Assessment Model[34], develop a suite of adaptation measures (e.g., storage investments, conservation rebate programs, and new pricing models) to address existing and predicted water shortages in the region.**	Updated analysis of supply and demand (use OSU Study) coupled with an alternatives analysis of potential strategies to reduce demand and/or increase supply (conservation, pricing, storage, reuse, etc.). Watershed Management Plans are developed that incorporate water source strategies. Document updated supply and demand projections for individual users and the region as a whole, including an analysis of alternatives and costs/benefits to meet current and future needs.	**Lead:** Oregon State University **Participants:** Mid-Coast Water Planning Partnership, Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife (OAR 690 Division 33 rules), Oregon Water Resources Department, water providers	PHASES 1-2	$100,000	▪ OWRD Feasibility Study Grants. ▪ BOR WaterSMART Basin Studies. ▪ Business Oregon Drinking Source Protection Fund. ▪ Special Public Works Fund (SPWF). ▪ Safe Drinking Water Revolving Loan Fund (SDWRLF). ▪ EPA Drinking Water State Revolving Fund (DWSRF).
			TOTAL		**$200,000**	

Performance Metrics

- A suite of adaptation measures is developed and implemented to address water shortages.
- Measurable increase in the amount of water stored during high flow periods (natural and built storage) for summer use.
- Reduce municipal water shortages in late summer-early fall and during declared drought periods.
- Reduce intensity and duration of streamflow shortages in late summer-early fall and during declared drought periods.
- A suite of adaptation measures is developed to address water shortages.

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[33] Consider existing studies for additional water sources, such as the 2001 CH2MHill Report on the Rocky Creek Regional Water Supply Project and Preliminary Water Management Plan, and conduct an updated analysis of supply and demand (considering the Multi-jurisdictional Natural Hazard Mitigation Plan and other risks, e.g., cyber security).

[34] (Oregon State University, Oregon Water Resources Department, and MCWPP are developing a Water Management Economic Assessment Model using existing water supply, pricing, and consumption data integrated with climate change projections to simulate the impact of future water shortages and illustrate trade-offs among potential adaptation measures.)

Metric Methodology

- The amount of water stored (natural and built storage) and available for all beneficial uses (instream and out-of-stream) on an average annual basis increases in the Mid-Coast planning area.

Imperative 8. Ecosystem Protection and Enhancement

Ensuring the health of watershed ecosystems through protection and enhancement actions helps the sustainable delivery of ecosystem services, including adequate water quality and quantity, reduced drinking water treatment and infrastructure costs, reduced flood mitigation costs, increased resilience to climate change stressors and natural hazards, opportunities to recover listed species and provide habitat for native fish and wildlife, and reduced risk for invasive species introductions and establishment.

Objectives

- Restore watershed ecological function (ridgetop to ocean approach), including restoring riparian areas and instream flow and habitat functions, values, and benefits; re-establishing hydrologic and sediment transport regimes to a more natural state; restoring natural channel morphology; protecting, maintaining, and improving water quality in the region for all beneficial uses; and implementing watershed restoration projects that (a) cool streams and improve summertime flows for sensitive species and water quality impairments, and (b) identify, meet, protect, and restore peak and ecological flows.
- Balance instream and out-of-stream water uses.
- Ensure year-round summer stream flows are sufficient to meet the instream water needs of fish and wildlife.
- Waterbodies consistently attain water quality standards that protect drinking water and other beneficial uses.
- Anticipate and prepare for the effects of climate change stressors, which are predicted to influence precipitation, temperature, coastal inundation, ecosystem function, and water quality.
- Prioritize restoration work and support land practices that reduce drinking water contaminants.
- Identify, meet, protect, and restore peak and ecological flows.
- Promote natural water storage using beavers, wetlands, and green infrastructure.

Action Details

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
44	**Riparian Restoration; Restore Channels; Floodplain Reconnection; Restore Stream Flow: Support restoration projects that involve diverse landowners and land management goals in locations that will achieve the greatest ecological returns on investment (e.g., cooler streams and improved summertime flows for sensitive species and to address water quality impairments).**	A diversity of landowners participates in the implementation of restoration projects that enhance ecological function in the region.	**Lead:** Mid-Coast Watersheds Council, Salmon-Drift Creek Watershed Council, US Forest Service, Bureau of Land Management **Participants:** Private landowners, Soil and Water Conservation Districts, Salmon Safe, Mid-Coast Watersheds Council, Oregon Department of Fish and Wildlife, Oregon Department of Forestry, Oregon Department of Environmental Quality, volunteers, Lincoln County Department of Community Development, NOAA Fisheries, US Geological Survey, Tribal nations, Oregon Watershed Enhancement Board	PHASES 1-3	The estimated cost to implement the full suite of restoration and improvement projects to address actions in this section and support ecological functions: $70M to $1.1.27M[35]	▪ National Fish and Wildlife Foundation Resilient Communities[36]. ▪ Bureau of Reclamation WaterSMART Cooperative Watershed Management Program (Phase I or Phase II Implementation). ▪ OWEB Partnership Technical Assistance Grant. OWEB Small Grant Program. ▪ OWEB Operating Capacity Grants. ▪ OWEB Stakeholder Engagement Grant. ▪ OWEB Restoration Grant. ▪ Jubitz Family Foundation Environmental Grant. ▪ Meyer Memorial Trust Healthy Environment Program. ▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program. ▪ USFWS Coastal Program. ▪ USFWS Landowner Incentive Program. ▪ NFWF Five Star and Urban Waters Restoration Grant Program.

[35] Source: Oregon Forest Resources Institute: https://oregonforests.org/sites/default/files/2019-01/OFRI_2019-20_ForestFacts_WEB.pdf

[36] Community demonstration & capacity-building projects that help communities understand environmental risks and opportunities and organize and take actions to improve local resiliency by enhancing natural buffers and system functions.

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
						▪ Starker Forests Grant. ▪ ODFW Access and Habitat Program. ▪ ODFW Wildlife Habitat Conservation and Management Program.
45	**Riparian Restoration; Restore Channels; Floodplain Reconnection; Restore Stream Flow: Use established methods (e.g., field assessment, remote sensing, and physical models, such as Heat Source) and local knowledge to prioritize stream reaches for riparian buffer restoration projects. Advocate for increasing wooded buffer zones associated with intermittent and non-fish bearing streams that feed source water as well as perennial streams that are not currently regulated (e.g., rural residential, urban, legacy agricultural areas).**	Healthy riparian areas in priority stream reaches. Achieve a clear understanding of locations/stream reaches where preservation of existing functional buffers would result in greatest protection against degradation of existing water quality.	**Lead:** US Forest Service, private landowners, Oregon Department of Forestry, Oregon Department of Environmental Quality, Oregon Department of Agriculture, Mid-Coast Watersheds Council, Salmon-Drift Creek Watershed Council **Participants:** Tribal nations, private landowners, Oregon Department of Fish and Wildlife	PHASE 2	$250,000	▪ National Fish and Wildlife Foundation Resilient Communities. ▪ OWEB Operating Capacity Grant. ▪ OWEB Restoration Grant. ▪ Meyer Memorial Trust Healthy Environment Program. ▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program. ▪ NFWF Five Star and Urban Waters Restoration Grant Program.
46	**Riparian Restoration; Restore Channels: Advocate for the restoration and conservation of native riparian vegetation to facilitate large natural wood recruitment, maintain water quality, ensure ecological function, and produce habitat for aquatic species, including beavers.**	Native riparian vegetation is restored and conserved to support and enhance ecological function in the region. Woody buffer zones associated with all stream sizes, including intermittent and non-fish bearing streams, are increased. Riparian zones, including intermittent flow stream zones, are expanded and/or restored, to levels that provide adequate ecological functions.	**Lead:** Oregon Department of Environmental Quality, Mid-Coast Watersheds Council, Oregon Department of Agriculture, Oregon Department of Forestry **Participants:** Oregon Department of Fish and Wildlife, watershed councils, US Forest Service, Lincoln County Soil and Water Conservation District, Tribal nations, private landowners	PHASE 1	Riparian Restoration to provide ecological functions[37] on 357 miles of impaired streams: Low estimate (Min CREP buffer on 1518 acres) = $7,131,746 $7M Median (partially functioning buffer on 2818 acres) = $13,244,671 $13M High Estimate (fully functioning buffer on 4,335 acres) = $20,376,418 $20M	▪ National Fish and Wildlife Foundation Resilient Communities. ▪ OWEB Small Grant Program. ▪ OWEB Operating Capacity Grant. ▪ OWEB Stakeholder Engagement Grant. ▪ OWEB Restoration Grant. ▪ Jubitz Family Foundation Environmental Grant. ▪ OWEB Forest Collaboratives Grants (federal lands). ▪ Meyer Memorial Trust Healthy Environment Program. ▪ USDA NRCS Emergency Watershed Protection Program. ▪ USDA NRCS Healthy Forests Reserve Program. ▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program. ▪ USFWS Coastal Program. ▪ USFWS Landowner Incentive Program. ▪ NFWF Five Star and Urban Waters Restoration Grant Program. ▪ ODFW Access and Habitat Program. ▪ ODFW Wildlife Habitat Conservation and Management Program. ▪ ODFW Riparian Lands Tax Incentive Program.

[37] Methods based on *Cost Estimate to Restore Riparian Forest Buffers and Improve Stream Habitat in the Willamette Basin, Oregon* (DEQ, 2010): ftp://deqftp2.deq.state.or.us/dwaltz/MCWPP/WillametteRipCost030310_V2.pdf

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
47	**Watershed Function and Ecosystem Services: Encourage longer forest rotations and implement more erosion control practices.**	Reduced sediment delivery to regional streams. Private forests are managed for multiple benefits, including ecological function and values (i.e., mimic natural watershed hydrology, sediment and nutrient processes and carbon storage). Larger proportion of road network is hydrologically disconnected from streams. Private forest operations widely implement Oregon Plan voluntary measures and report project data to the Oregon Watershed Restoration Inventory (OWRI)[38] or other databases, to track improvements.	**Lead:** US Forest Service, Bureau of Land Management, private industrial forestry, Oregon Department of Forestry, private small woodland landowners **Participants:** Watershed councils, Lincoln Soil and Water Conservation District, Oregon Department of Environmental Quality, Oregon Water Resources Department, Oregon Department of Fish and Wildlife	PHASE 2		▪ OWEB Operating Capacity Grant. ▪ OWEB Stakeholder Engagement Grant. ▪ OWEB Forest Collaboratives Grants (federal lands). ▪ Business Oregon Drinking Water Source Protection Fund. ▪ Clean Water State Revolving Fund. ▪ USDA NRCS Healthy Forests Reserve Program. ▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program. ▪ USFWS Landowner Incentive Program. ▪ NFWF Five Star and Urban Waters Restoration Grant Program. ▪ ODFW Access and Habitat Program. ▪ ODFW Wildlife Habitat Conservation and Management Program. ▪ ODFW Riparian Lands Tax Incentive Program.
48	**Sediment Processes: Evaluate anthropogenic sources of fine sediment from all land uses, including mass wasting and unsurfaced roads.** **Prevention, Upgrades, and Repair: Seek funding opportunities to reduce shallow landslide risk and other sediment delivery hazards (e.g., undersized culverts, outdated road maintenance, legacy roads) and perform road upgrades, repair, and decommissioning.**	Mass wasting (shallow landslides and debris flows), surface and hillslope erosion and road sediment are reduced from all land uses. Natural sediment processes are restored to extent possible. A reduction in anthropogenic causes of mass wasting, culvert failures, and road sediment delivery to Mid-Coast region streams Private forest operations widely implement Oregon Plan voluntary measures and report project data to OWRI or other database to track improvements.	**Lead:** US Forest Service, Bureau of Land Management, Oregon Department of Forestry, private industrial forestry, private small woodland landowners **Participants:** Watershed councils, Lincoln SWCD, Oregon Department of Environmental Quality, Oregon Water Resources Department, Oregon Department of Fish and Wildlife, Lincoln County, private landowners	PHASES 1-3	$150,000	▪ Bureau of Reclamation WaterSMART Cooperative Watershed Management Program (Phase II Implementation). ▪ OWEB Restoration Grants. ▪ Meyer Memorial Trust Healthy Environment Program. ▪ USDA NRCS Emergency Watershed Protection Program. ▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program.
49	**Floodplain Reconnection and Wetlands: Protect beaver populations and encourage beaver pond creation, especially in critical areas with low summer flows.**	A measurable increase in wetland habitat and the amount of naturally stored water in critical areas where summer flows are low.	**Lead:** US Forest Service, Bureau of Land Management, Oregon Department of Fish and Wildlife, Mid-Coast Watersheds Council **Participants:** Oregon Department of Forestry, Oregon Department of Agriculture, Lincoln County, private landowners	PHASE 1	$150,000	▪ Bureau of Reclamation Cooperative Watershed Management Grant (Phase I). ▪ OWEB Operating Capacity Grant. ▪ Jubitz Family Foundation Environmental Grant.
50	**Riparian Restoration; Restore Channels; Restore Stream Flow: Design and implement restoration projects with partners to directly address impairments and improve conditions (e.g., erosion prevention and control, riparian and wetland buffers, urban tree protection).**	Restoration projects are collaboratively implemented to address limiting factors and improve ecological function.	**Lead:** Watershed councils, US Forest Service, Bureau of Land Management, Lincoln Soil and Water Conservation District **Participants:** Oregon Department of Agriculture, Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, OSU Extension Service, Oregon Department of Forestry Oregon Watershed Enhancement Board, water providers	PHASE 3	$250,000	▪ National Fish and Wildlife Foundation Resilient Communities. ▪ Bureau of Reclamation WaterSMART Cooperative Watershed Management Program (Phase II Implementation). ▪ OWEB Partnership Technical Assistance Grant. OWEB Small Grant Program. ▪ OWEB Operating Capacity Grant. ▪ OWEB Stakeholder Engagement Grant. ▪ OWEB Restoration Grant.

[38] Oregon Watershed Restoration Inventory (OWRI)

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
						▪ ODEQ Supplemental Environmental Projects (SEP) Program. ▪ Georgia-Pacific Environment Grant Program. ▪ Meyer Memorial Trust Healthy Environment Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ EPA Clean Water State Revolving Fund. ▪ USDA NRCS Emergency Watershed Protection Program. ▪ USDA NRCS Healthy Forests Reserve Program. ▪ EPA Nonpoint Source Section 319 Grants. ▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program. ▪ USFWS Coastal Program. ▪ USFWS Landowner Incentive Program. ▪ NFWF Five Star and Urban Waters Restoration Grant Program. ▪ ODFW Access and Habitat Program. ▪ ODFW Riparian Lands Tax Incentive Program.
51	**Restore Stream Flow: Evaluate the mechanisms and conditions for restoring hyporheic flows (the transport of surface water through sediments in flow paths that return to surface water) in the Mid-Coast using a suite of strategies (articulated in the Oregon Plan and other plans).**	Channel conditions (morphology) and watershed mechanisms exist for restoring hyporheic flows. Mechanisms, conditions, and locations for restoring hyporheic flows are identified. Projects to restore hyporheic flows are developed and implemented.	**Lead:** Mid-Coast Watersheds Council, Salmon-Drift Creek Watershed Council, US Forest Service, Bureau of Land Management **Participants:** Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, US Geological Survey, Tribal nations		$150,000	▪ OWEB Technical Assistance Grant. ▪ OWEB Restoration Grant. ▪ Meyer Memorial Trust Healthy Environment Program. ▪ OWRD Water Projects Grants and Loans. ▪ NFWF Five Star and Urban Waters Restoration Grant Program.
52	**Protect Stream Flow: Recommend limits on further appropriation of water on high priority streams where water available for meeting aquatic life needs.**	Further appropriation of water on high priority streams is limited to protect native fish and wildlife. The criteria for high priority streams is identified (e.g., streams which lack adequate summertime flow).	**Lead:** Oregon Department of Fish and Wildlife, Oregon Water Resources Department, Oregon Department of Environmental Quality (OAR 690-Div 33 review)[39] **Participants:** Mid-Coast Watersheds Council, Salmon-Drift Creek WC, Confederated Tribes of Siletz Indians of Oregon, water providers and municipalities, Wild Salmon Center	PHASE 2	$150,000	▪ Charlotte Martin Foundation Wildlife and Habitat Grant. ▪ OWEB Water Acquisition Grant. Business Oregon Drinking Water Source Protection Fund. ▪ OWRD Water Projects Grants and Loans. ▪ USDA Rural Development Water and Waste Disposal Loan and Grant Program.
53	**Restore Stream Flow: Support projects that result in increased water retention capacity in channels, floodplains, and adjacent uplands and wetlands using a variety of strategies.**	Review proposed restoration and enhancement projects with this objective as one outcome. Strategies and projects are implemented that increase water retention capacity in Mid-Coast channels, floodplains, uplands, and wetlands.	**Lead:** US Forest Service, Bureau of Land Management, MidCoast Watersheds Council, Salmon-Drift Creek Watershed Council, local planners **Participants:** Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, Oregon Department of Forestry, Oregon Department of Agriculture, Oregon Department of State Lands, Oregon Water Resources Department, US Geological survey, Tribal nations	PHASES 1-3	Cost estimates included in actions 44 and 46	▪ OWEB Focused Investment Partnership (FIPs). ▪ Bureau of Reclamation Cooperative Watershed Management Grant (Phase I or Phase II Implementation). ▪ OWEB Small Grant Program. ▪ OWEB Restoration Grant. ▪ USDA NRCS Agricultural Conservation Easement Program. ▪ OWRD Water Projects Grants and Loans.

[39] https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=3153

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
						▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program. ▪ USFWS National Coastal Wetlands Conservation Grant Program. ▪ NFWF Five Star and Urban Waters Restoration Grant Program.
54	**Restore Stream Flow: Determine ecological flows (seasonally varying flow targets and temperature-based flow targets), and identify basin-wide in-stream demands. Support development of additional instream water rights. Implement flow restoration efforts in high priority areas as determined by Instream Water Right Monitoring and other means (e.g., ODFW's Aquatic Habitat Prioritization).**	Ecological flows are identified for the highest priority waterways. Projects are identified to protect and restore instream flow.	**Lead:** Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, Oregon Water Resources Department, Oregon Parks and Recreation Department **Participants:** Mid-Coast Watersheds Council, Salmon-Drift Creek Watershed Council, water users, Oregon Department of State Lands, local planners	PHASE 1	$250,000	▪ OWEB Partnership Technical Assistance Grant. ▪ OWRD Water Projects Grants and Loans. ▪ U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program. ▪ NFWF Five Star and Urban Waters Restoration Grant Program.
55	**Restore Stream Flow: Use established voluntary programs, or other tools, to convert existing water rights (e.g., irrigation, commercial use, other out-of-stream uses) to instream uses that protect critical flows needed to support fish and wildlife, water quality, recreation, and scenic attraction.**	An analysis is conducted in Mid-Coast watershed basins to prioritize locations in need of instream water rights. In-stream water rights are established that protect the full suite of flows for a diversity of uses.	**Lead:** Oregon Department of Environmental Quality, Oregon Water Resources Department, Oregon Parks and Recreation Department (state agencies for new rights), Oregon Department of State Lands, water providers and municipalities **Participants:** Oregon Department of Fish and Wildlife, Mid-Coast Watersheds Council, Oregon Water Resources Department, Oregon Watershed Enhancement Board (nonprofits for existing rights), water rights holders	PHASE 1 for analysis PHASE 2 to obtain or transfer rights	$250,000	▪ OWEB Water Acquisition Grant. ▪ USDA Rural Development Water and Waste Disposal Loan and Grant Program.
56	**Control Invasive Weeds: Identify priority invasive species in each watershed, and seek funding to support control and management of invasives in streams and along stream corridors while encouraging establishment of native vegetation.**	Priority invasive species are identified, controlled, and managed. Prevent new invasive species introductions and decrease the scale and spread of current infestations.	**Lead:** Mid-Coast Watersheds Council, Oregon Department of Agriculture, Soil and Water Conservation Districts **Participants:** Oregon Invasive Species Council, local watershed groups, Oregon Department of Forestry, Oregon Department of Fish and Wildlife	PHASES 1-3	$250,000	▪ Oregon Invasive Species Council (OISC) Invasive Species Education and Outreach Grant. ▪ OWEB Operating Capacity Grant. ▪ OWEB Restoration Grant. ▪ Georgia-Pacific Environment Grant Program. ▪ ODA Noxious Weed Grant Program. ▪ ODFW's Wildlife Integrity Program. ▪ USFWS Coastal Program.
57	**Protect Existing Complex Forest; Strategic Thinning; Prescribed Fire; Promote Native Understory Vegetation: Advocate for implementation of the Lincoln County Multi-Jurisdictional Natural Hazard Mitigation Plan, especially as it relates to wildfire mitigation in the Mid-Coast.**	Implementation of the Lincoln County Multi-Jurisdictional Natural Hazard Mitigation Plan, especially as it relates to wildfires, is supported throughout the Mid-Coast Region.	**Lead:** Lincoln County, US Forest Service, Oregon Department of Forestry	PHASE 1	$150,000	
58	**Easements and acquisitions: Acquire land, or obtain conservation easements, to protect critical land areas managed for water quality protection.**	Critical lands are in drinking water source areas/watersheds are protected. Key areas are publicly owned and managed, or managed for conservation. An increasing proportion of acreage in drinking water source areas is protected.	**Lead:** Counties, water providers and municipalities, US Forest Service, Bureau of Land Management, watershed councils, non-governmental organizations, Natural Resources Conservation Service, corporations, McKenzie River Trust **Participants:** private landowners, Oregon Watershed Enhancement Board	PHASES 1-2	$10,000,000	▪ Bureau of Reclamation WaterSMART Cooperative Watershed Management Program (Phase I or Phase II Implementation). ▪ Meyer Memorial Trust Healthy Environment Program. ▪ Business Oregon Drinking Water Source Protection Fund. ▪ USDA NRCS Emergency Watershed Protection Program. Safe Drinking Water Revolving Loan Fund (SDWRLF). ▪ USDA Rural Development Water and Waste Disposal Loan and Grant Program. ▪ ODFW Access and Habitat Program.

Action		Desired Outcomes	Potential Lead & Participants	Timeline	Budget	Potential Funding Sources
						▪ OWEB land acquisition funds.
59	**Support and advocate for the compilation of a hierarchy of necessary spatial analyses and modeling to determine which conservation strategies, and locations on the landscape, will result in the greatest environmental returns on investment (ROI) (e.g., ecological function) and achieve the highest priorities in existing species recovery plans (e.g., improving winter and summer rearing habitats). Advocate for implementation of strategies in federal Coho recovery plan and Oregon coast Coho Conservation Plan (OWEB FIP Framework).**	Spatial analyses are conducted/compiled to identify strategies, and locations on the landscape, to achieve the greatest environmental returns on investment (ROI) (e.g., ecological function) and actions support existing recovery plans.	**Lead:** Mid-Coast Watershed Council, Oregon Watershed Enhancement Board, Oregon Department of Environmental Quality, US Forest Service, Lincoln County Soil and Water Conservation District, Oregon Water Resources Department, Lincoln County **Participants:** Environmental Protection Agency (Bob McKane/Visualizing Ecosystem Land Management Assessments (VELMA) modeling), US Geological Survey, Tribal nations, non-governmental organizations, Oregon Watershed Enhancement Board, Oregon Department of Fish and Wildlife	PHASE 2	$250,000	▪ OWEB technical assistance grants.
			TOTAL		**$99.5M–$1,169M**	

Performance Metrics

- Ecological function (i.e., natural watershed hydrology, sediment, nutrient and carbon processes) is enhanced throughout Mid-Coast watersheds.
- Stream habitat projects are implemented to address key limiting factors.
- Native trees and shrubs are planted in riparian areas and on floodplains.
- Invasive species are eradicated, or controlled, to desired levels.
- Lateral side-channels and floodplains are reconnected to stream channels.
- Measurable improvement in aquatic habitat condition and trends for all primary land uses in the Mid-Coast strata based on ODFW aquatic habitat inventory and Oregon Plan Habitat Monitoring methodology.[40]
- Water rights transactions keep more water in streams and incorporate conservation and water efficiency strategies.
- No net loss in working lands acreage in the Mid-Coast region of Oregon.
- Net increase in land acquisition and easements that protect water quality.
- Natural storage (e.g., beavers, wetlands) projects are implemented.
- Land is preserved in priority areas.

Metric Methodology

- The Mid-Coast adopts a tool to assess ecosystem recovery (e.g., 5-Star Recovery System in Action), and evaluates progress in protecting and enhancing Mid-Coast ecosystems through time.
- ODFW aquatic habitat inventory & Oregon Plan Habitat Monitoring methodology is utilized and widely supported[41].

[40] Oregon Plan Habitat Monitoring: https://odfw.forestry.oregonstate.edu/freshwater/inventory/op_reports.htm.

[41] ODFW Aquatic Inventories Project: https://odfw.forestry.oregonstate.edu/freshwater/inventory/methods.html.